IN THE DRAWINGS

Applicants respectfully request approval of the following drawing changes. Figures 4 and 6 are being amended to properly identify the components in accordance with the specification. Specifically, Figures 4 and 6 are being amended to identify triangular chevrons on the fan exhaust nozzle 34. Applicants hereby submit Replacement Sheets incorporating the changes to Figures 4 and 6. No new matter has been added.

Remarks

The Office Action mailed June 15, 2006 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-20 are now pending in this application. Claims 1-20 stand rejected. Claims 13 and 19 stand objected to.

Entry of this amendment is proper under 37 CFR § 1.116 since the amendment: (a) places the application in condition for allowance for the reasons discussed herein; (b) does not raise any new issue requiring further search and/or consideration as the amendment relates to issues previously discussed throughout prosecution; (c) satisfies a requirement of form asserted in the Office Action; (d) does not present any additional claims without canceling a corresponding number of finally rejected claims; and (e) places the application in better form for appeal, should an appeal be necessary. The amendments herein are necessary and were not earlier presented because they are made in response to arguments raised in the final Office Action. Entry of this amendment is thus respectfully requested.

The objections to the drawings are respectfully traversed. Specifically, Figures 4 and 6 have been corrected to illustrate triangular chevrons on the fan exhaust nozzle 34 as described in the specification. No new matter has been added. For at least the reasons set forth above, Applicants respectfully request that the objection to the drawings be withdrawn.

The objection to Claims 13 and 19 due to informalities is respectfully traversed. Specifically, Claims 13 and 19 as suggested by the Examiner are each amended to delete the reference to "a manifold coupled to said gas turbine nozzle." No new matter has been added. For at least the reasons set forth above, Applicants respectfully request that the objection to Claims 13 and 19 be withdrawn.

The rejection of Claims 1-20 under 35 U.S.C. 103(a) as being unpatentable over any of Mathews et al. (U.S. Patent 6,314,721) ("Mathews"), Nesbitt et al. (U.S. Patent 6,718,752) ("Nesbitt"), and Hebert (U.S. Patent 6,826,901) ("Hebert") in view of Lilley (U.S. Patent

2,990,905) ("Lilley") and Motsinger (U.S. Patent 3,527,317) ("Motsinger") is respectfully traversed.

Mathews describes a method, an assembly, and a turbofan engine (10) for suppressing noise. The turbofan engine (10) includes an inner exhaust nozzle (20) and an outer exhaust nozzle (30). The inner exhaust nozzle (20) includes an arrangement of stationary alternating tabs (40) that are disposed circumferentially on an exit of the inner exhaust nozzle (20) for automatically suppressing jet noise when the engine (10) is in operation. The arrangement of alternating tabs (40) includes tabs (44) that are directed radially outward and extend into a fan flow stream, tabs (48) which extend from the exhaust nozzle duct (20), and tabs (52) that are directed radially inward and extend into a core flow stream. As air flows through the inner exhaust nozzle (20) and exits the exhaust nozzle (20), the alternating tabs (40) at the end of the inner exhaust nozzle (20) alter flow disturbances causing vortices to form. Notably, Mathews does not describe nor suggest a plurality of azimuthally arranged tubes that each include an upstream end coupled to a manifold and a downstream end coupled to either the inner exhaust nozzle (20) or the outer exhaust nozzle (30) such that the plurality of tubes each externally extend away from the manifold.

Nesbitt describes a method, an assembly, and an engine nacelle (10) for suppressing noise. The engine nacelle (10) for housing a jet engine (10a) includes a primary exhaust gas flow nozzle (12) and a secondary exhaust gas flow nozzle (14). The secondary exhaust gas flow nozzle (14) includes a lip area (18) and a plurality of circumferentially spaced flow altering components (16) that extend from the lip area (18). The flow altering components (16) automatically operate to deform in response to heat such that they extend into an exhaust gas flow path to facilitate mixing an exhaust flow with an adjacent air flow. Notably, Nesbitt does not describe nor suggest a plurality of azimuthally arranged tubes that each include an upstream end coupled to a manifold and a downstream end coupled to either the primary exhaust gas flow nozzle (12) or the secondary exhaust gas flow nozzle (14) such that the plurality of tubes each externally extend away from the manifold.

Hebert describes a turbofan jet engine. A nacelle (18) houses the turbofan jet engine and includes a segmented exhaust nozzle (10) including a fan nozzle inner wall (12) and a fan nozzle outer wall (14) that each form an annular exhaust gas flow path (16). The fan nozzle inner wall (12) and the fan nozzle outer wall (14) each include curved portions which define aerodynamic choke points that form a geometric inflection which facilitates curbing jet engine noise when the gas turbine engine is in operation. Notably, Hebert does not describe nor suggest a plurality of azimuthally arranged tubes each include an upstream end coupled to a manifold and a downstream end coupled to either portion of the segmented exhaust nozzle (10) such that the plurality of tubes each externally extend away from the manifold.

Lilley describes a jet pipe nozzle. The jet pipe nozzle includes an outer wall (1), a co-axial inner wall (1a), and an annular duct (2) positioned between the outer wall (1) and the inner wall (1a). The annular duct (2) includes a series of convergent nozzles (3) that are separately supplied **within** a downstream wall of the annular duct (2). The nozzles (3) are positioned to emit auxiliary jets (6) in a direction such that the jets penetrate an outer envelope (5) of a main jet to restrict formation of large eddies which would otherwise form. Notably, Lilley does not describe nor suggest a plurality of azimuthally arranged tubes that each include an upstream end coupled to the annular duct (2) and a downstream end coupled to the jet pipe nozzle such that the plurality of tubes each **externally extend away from** the annular duct (2).

Motsinger describes an engine (40) for suppressing noise. The engine (40) includes a bladed fan rotor (42) that pressurizes an air stream, a cowl (44), and a nacelle (48). The air stream is straightened to an axial flow direction by outlet guide vanes (46). Pressurized air enters a fan duct (52) and the pressurized fan air is discharged from an annular propulsive nozzle (54). A hot gas shroud stream may be discharged from an annular shroud nozzle (56) to limit an angle of noise propagation from nozzle (54). Alternatively, a water vapor shroud stream may be discharged from the annular shroud nozzle (56) to control an angle of propagation of sound from the nozzle (54). Means may also be provided to shut off a fuel supply or a water supply so that the respective shroud stream is utilized only under conditions where noise is a serious problem in an operation of an aircraft. Notably, Motsinger does not

describe or suggest a plurality of azimuthally arranged tubes that each include an upstream end coupled to a manifold and a downstream end coupled to the engine (40) such that the plurality of tubes each externally extend away from the manifold.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Mathews, Nesbitt, Hebert, Lilley, nor Motsinger, considered alone or in combination, describes or suggests the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine any of Mathews, Nesbitt, Hebert, Lilley, and Motsinger because there is no motivation to combine the references suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicants' own teaching. Rather, only the conclusory statement that "it would have been obvious to one of ordinary skill in the art to employ" angled tube pairs and a valve suggests combining the disclosures.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicant's disclosure. In re Vaeck , 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion nor motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is

impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected in an attempt to arrive at the claimed invention. Since there is no teaching or suggestion in the cited art for the combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejection be withdrawn.

In addition, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Mathews, Nesbitt, Hebert, Lilley, nor Motsinger, considered alone or in combination, describes or suggests a plurality of azimuthally arranged tubes each comprising an upstream end coupled to a manifold and a downstream end coupled to a nozzle so that the plurality of tubes externally extend away from the manifold.

Moreover, and to the extent understood, none of Mathews, Nesbitt, Hebert, Lilley nor Motsinger, considered alone or in combination, describes or suggests the claimed invention. Specifically, Claim 1 recites a method for operating a gas turbine engine, the gas turbine engine comprising a nozzle including a plurality of chevrons coupled to the nozzle, the method including "positioning a plurality of tubes azimuthally around an outer periphery of the nozzle . . . coupling an upstream end of each of the plurality of tubes to a manifold . . . coupling a downstream end of each of the plurality of tubes to the nozzle such that the plurality of tubes each externally extend away from the manifold . . . ."

None of Mathews, Nesbitt, Hebert, Lilley nor Motsinger, considered alone or in combination, describes or suggests a method for operating a gas turbine as is recited in Claim 1. More specifically, none of Mathews, Nesbitt, Hebert, Lilley nor Motsinger, considered alone or in combination, describes nor suggests a method including positioning a plurality of

tubes azimuthally around an outer periphery of the nozzle, coupling an upstream end of each of the plurality of tubes to a manifold, and coupling a downstream end of each of the plurality of tubes to the nozzle such that the plurality of tubes each externally extend away from the manifold, as required by Applicants' claimed invention. Rather, in contrast to the present invention, Mathews, Nesbitt, Hebert, and Motsinger describes methods that do not include a manifold and a plurality of azimuthally arranged tubes coupled to a nozzle and a manifold, and Lilley describes a series of convergent nozzles (3) separately supplied **within** a downstream wall of an annular duct (2). Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over any of Mathews, Nesbitt, and Hebert in view of Lilley and Motsinger.

Claims 2-7 depend, directly or indirectly, from independent Claim 1. When the recitations of Claims 2-7 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-7 likewise are patentable over Mathews, Nesbitt, and Hebert in view of Lilley and Motsinger.

Claim 8 recites an assembly for a gas turbine engine, the assembly including "a gas turbine nozzle . . . a plurality of chevrons . . . and a noise suppression system coupled to said gas turbine nozzle, said noise suppression system comprising a manifold coupled to said gas turbine nozzle and a plurality of azimuthally arranged tubes each comprising an upstream end coupled to said manifold and a downstream end coupled to said gas turbine nozzle such that said plurality of tubes each extend away from said manifold . . . ."

None of Mathews, Nesbitt, Hebert, Lilley nor Motsinger, considered alone or in combination, describes or suggests an assembly for a gas turbine engine as is recited in Claim 8. More specifically, none of Mathews, Nesbitt, Hebert, Lilley nor Motsinger, considered alone or in combination, describes or suggests an assembly including a noise suppression system having a manifold coupled to a gas turbine nozzle and a plurality of azimuthally arranged tubes each comprising an upstream end coupled to the manifold and a downstream end coupled to the gas turbine nozzle such that the plurality of tubes each extend away from the manifold, as required by Applicants' claimed invention. Rather, in contrast to the present

invention, Mathews, Nesbitt, Hebert, and Motsinger describes methods that do not include a manifold and a plurality of azimuthally arranged tubes coupled to a nozzle and a manifold, and Lilley describes a series of convergent nozzles (3) separately supplied **within** a downstream wall of an annular duct (2). Accordingly, for at least the reasons set forth above, Claim 8 is submitted to be patentable over any of Mathews, Nesbitt, and Hebert in view of Lilley and Motsinger.

Claims 9-14 depend, directly or indirectly, from independent Claim 8. When the recitations of Claims 9-14 are considered in combination with the recitations of Claim 8, Applicants submit that dependent Claims 9-14 likewise are patentable over Mathews, Nesbitt, and Hebert in view of Lilley and Motsinger.

Claim 15 recites a gas turbine engine including "a core engine nozzle . . . a fan nozzle . . . a plurality of chevrons coupled to at least one of said core engine nozzle and said fan nozzle . . . and a noise suppression system coupled to at least one of said core engine nozzle and said fan nozzle, said noise suppression system comprising a manifold coupled to at least one of said core engine nozzle and said fan nozzle and a plurality of tubes each comprising an upstream end coupled to said manifold and a downstream end coupled to said at least one of said core engine nozzle and said fan nozzle so that said plurality of tubes externally extend away from said manifold . . . ."

None of Mathews, Nesbitt, Hebert, Lilley nor Motsinger, considered alone or in combination, describes or suggests a gas turbine engine as is recited in Claim 15. More specifically, none of Mathews, Nesbitt, Hebert, Lilley nor Motsinger, considered alone or in combination, describes nor suggests a gas turbine engine including a noise suppression system having a manifold coupled to at least one of a core engine nozzle and a fan nozzle and a plurality of tubes each comprising an upstream end coupled to the manifold and a downstream end coupled to the at least one of core engine nozzle and fan so that the plurality of tubes externally extend away from the manifold, as required by Applicants' claimed invention. Rather, in contrast to the present invention, Mathews, Nesbitt, Hebert, and Motsinger describes methods that do not include a manifold and a plurality of azimuthally

arranged tubes coupled to a nozzle and a manifold, and Lilley describes a series of convergent nozzles (3) separately supplied **within** a downstream wall of an annular duct (2). Accordingly, for at least the reasons set forth above, Claim 15 is submitted to be patentable over any of Mathews, Nesbitt, and Hebert in view of Lilley and Motsinger.

Claims 16-20 depend, directly or indirectly, from independent Claim 15. When the recitations of Claims 16-20 are considered in combination with the recitations of Claim 15, Applicants submit that dependent Claims 16-20 likewise are patentable over Mathews, Nesbitt, and Hebert in view of Lilley and Motsinger.

For at least the reasons set forth above, Applicant respectfully requests that the Section 103 rejection of Claims 1-20 be withdrawn.

Claim 10 was indicated as being allowable if "rewritten in independent form including all limitations of the base claim and any intervening claims and to further specify that each tube pair is located on respective angled sides of each chevron." Claim 10 depends indirectly from independent Claim 8 which is submitted to be in condition for allowance. When the recitations of Claim 10 are considered in combination with the recitations of Claim 8, Applicants submit that dependent Claim 10 likewise is in condition for allowance.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

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